

METHOD FOR FORMING POLYMER BRUSH PATTERN
ON A SUBSTRATE SURFACE

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ABSTRACT OF THE DISCLOSURE

A method is disclosed for providing a patterned surface wherein predetermined regions of the surface are masked with a self-assembled monolayer ("SMA") covalently bound to a brush polymer overlayer. The remainder of the substrate surface will generally be functionalized with a second self-assembled monolayer. Preferably, the method involves a microcontact printing technique, wherein a molecular moiety capable of spontaneously forming an SMA upon transfer to a surface is "stamped" onto a substrate surface, followed by growth (or covalent attachment) of a polymer on exposed functional groups within the SMA molecules. Coverage of surface regions with both an SMA and a polymer overlayer provides a number of advantages, particularly with regard to surface masking during etching and the like. The method is useful in the manufacture of microelectronic circuitry, biosensors, high-density assay plates, and the like.

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